

partial or total separation of the thin film from the rest of the substrate, this separation comprising a step in which thermal energy is added and pressure is applied to the plane face.

22. (NEW) The process according to claim 21, in which the pressure is a gas pressure.

23. (NEW) The process according to claim 21, in which the pressure is a mechanical pressure.

24. (NEW) The process according to claim 23, in which the mechanical pressure is generated using a piston.

25. (NEW) The process according to claim 21, in which the pressure is applied locally on the plane face.

26. (NEW) The process according to claim 21, in which the pressure is applied uniformly on the plane face.

27. (NEW) The process according to claim 21, also comprising bonding of a thickener onto the plane face, after implantation of the gaseous compounds.

28. (NEW) The process according to claim 27, in which the thickener is composed of a wafer.

29. (NEW) The process according to claim 28, in which the wafer is bonded by molecular bonding with the plane face.

30. (NEW) The process according to claim 27, in which the thickener is formed by deposition of one or several materials.

31. (NEW) The process according to claim 27, in which the pressure is applied through the thickener.

32. (NEW) The process according to claim 21, in which the pressure is adjusted during the coalescence of at least part of the micro-cavities, to remain slightly above a pressure called the limiting pressure, below which blisters appear on the plane face and above which blisters do not appear on the plane face.

33. (NEW) The process according to claim 21, in which coalescence is performed such that the thin film is separated from the rest of the substrate by pulling them apart.

34. (NEW) The process according to claim 21, in which the thin film is separated from the rest of the substrate by application of a heat treatment and, optionally, by mechanical forces.

35. (NEW) The process according to claim 21, in which the substrate used as the initial substrate is a substrate that has already been used to produce a thin film according to the process.

36. (NEW) The process according to claim 35, in which the previously used substrate is polished to provide a new plane face.

37. (NEW) The process according to claim 21, in which the substrate supports one or several homogeneous and/or heterogeneous layers on the side having the plane face.

38. (NEW) The process according to claim 21, in which the substrate comprises semi-conducting material, at least on the side having the plane face.

91 39. (NEW) The process according to claim 21, in which the substrate comprises all or part of at least one electronic device and/or at least one electro-optical device, on the side having the plane face.

40. (NEW) The process according to claim 21, in which the separation of the thin film is delayed by the application of an additional step that consists of applying an additional pressure onto the thin film.